

Before the
Federal Communications Commission
Washington, D.C. 20554

CC Docket No. 87-124

In the Matter of

Access to Telecommunications
Equipment and Services by the Hearing
Impaired and Other Disabled Persons

**NOTICE OF PROPOSED RULE MAKING AND
FURTHER NOTICE OF INQUIRY**

Adopted: March 24, 1988

Released: March 29, 1988

By the Commission:

SUMMARY

1. This proceeding was initiated to gather information concerning the telecommunications needs of the hearing impaired and other disabled persons and to evaluate the need for consideration of regulatory measures or legislative initiatives to ensure reasonable access to telecommunications services by those persons. Ensuring reasonable access to telecommunications services by all Americans has been, and continues to be, a top priority of this Commission. In the Notice of Proposed Rule Making portion of this Notice, we propose specific changes in our regulations that should increase the ability of the hearing impaired to access telephone service by expanding our regulatory definition of "essential" telephones that must be compatible with hearing aids equipped with telecoils (hereafter hearing aid compatible telephones or HAC). In the Notice of Further Inquiry portion of the Notice, we seek comment on other important and difficult issues involved in ensuring reasonable access to telephone service for the hearing impaired and other disabled persons, and encourage existing groups with expertise in the area to coordinate the development of consensus proposals. For example, we ask for specific proposals for implementing an interstate relay system for users of Telecommunications Devices for the Deaf (TDDs), which would enable deaf and speech-impaired persons to carry on real-time interstate conversations with voice telephone users. We also seek further comment on various other issues on which there is not an adequate record. Finally, this Notice also serves as a report to the Congress of the information gathered to date in this proceeding to aid it in deciding whether to amend the Telecommunications for the Disabled Act of 1982, Public Law No. 97-410 (Disabled Act) to require that all telephones be compatible with telecoil hearing aids. As stated below, we find, based on this record, that various countervailing public interest considerations make it a close question whether this amendment to the Disabled Act should be adopted. On balance, we tentatively conclude that this amendment is not necessary at this time to ensure reasonable access by the disabled to telecommunications services.

INTRODUCTION

2. In response to the Disabled Act, the Commission, on December 1, 1983, adopted specific rules designed to improve the availability of telecommunications equipment and services for the hearing impaired and other disabled persons.¹ These rules: (1) require telephones classified as "essential"² to be internally compatible with hearing aids specially designed for telephone use;³ (2) set forth the technical standards hearing aid compatible telephones must meet; (3) require each telephone package to denote whether the telephone is hearing aid compatible or not; and (4) allow carriers to provide "specialized terminal equipment" to persons with hearing, sight, speech and mobility impairments, and permit state commissions to allow carriers to recover through tariffs "reasonable and prudent costs not charged directly to users of such equipment." During the 1982 Congressional hearings leading to the Disabled Act and in Commission proceedings,⁴ it was evident that a segment of the U.S. population was having difficulty obtaining telecommunications services and equipment because of certain physical disabilities. This Commission believed the rules adopted would improve access to telecommunications services by these disabled persons. The rules have been in place for nearly four years. This proceeding was initiated to examine the effectiveness of the current rules, particularly in the wake of recent technological and other changes. On May 15, 1987, we issued a *Notice of Inquiry* (hereinafter NOI)⁵ to gather information concerning the telecommunications needs of the hearing impaired and other disabled persons and to provide interested parties an opportunity to comment on what action, if any, is necessary or desirable to assist these persons in obtaining reasonable access to telecommunications services.

3. The Commission currently is restricted from requiring that all telephones be hearing aid compatible.⁶ Section 610(b) of the Disabled Act directed the Commission to "require that *essential* telephones provide internal means for effective use with hearing aids that are specially designed for telephone use . . ." (emphasis added). The Disabled Act also specifically directed the Commission, in implementing the Act through regulations, to consider the costs and benefits to "all telephone users, including persons with and without hearing impairments," and to adopt rules that "encourage the use of currently available technology and do not discourage . . . the development of improved technology." 47 U.S.C. § 610(e).

4. In response to these directives we adopted Section 68.112 of the rules. 47 C.F.R. § 68.112. This rule takes cognizance of Congressional intent to allow the continued manufacture and sale of incompatible telephones while ensuring that the needs of the hearing impaired are met. Accordingly, our rules define essential telephones to include coin-operated telephones; credit card telephones where there is not a coin-operated telephone nearby and readily available; telephones in elevators, tunnels and hospital and convalescent home rooms; telephones in ten percent of rooms in hotels/motels; the work station telephones of employees with hearing impairments requiring the use of a telephone to conduct their work assignments; and telephones made available for use by the public in places of business or buildings in which visits by the public are reasonably expected.

5. The NOI first raised the issue whether anything needed to be done to increase the availability of HAC telephones. The Commission has two primary options in

light of the Congressional mandate that only essential telephones be hearing aid compatible. First, we could expand the definition of "essential" under our rules. Second, we could recommend Congress amend the statute. Based on the current record, we are proposing certain changes in our rules that we tentatively conclude, after weighing the costs and benefits, would increase access of the hearing impaired to telephone service and would be in the overall public interest. These changes would expand the definition of essential telephones to include all credit card telephones and telephones located in common areas in a hearing-impaired employee's workplace. We also are seeking comment in our further inquiry on a number of other suggestions that could lead to rule changes. However, we cannot conclude that, based on the current record, it would be in the public interest to amend the statute to require that all telephones be hearing aid compatible.⁷ We make this finding because it has not been shown that amendment would be in the public interest. We have doubts about the wisdom of such an amendment because of indications in the record that: 1) there has been an apparent decrease in hearing aids with the telecoil feature; 2) inexpensive alternative portable devices are available which are designed to enhance the hearing ability of persons with hearing disabilities while using a standard telephone; 3) it is not clear that such an amendment would address the actual problems being experienced by the segment of our hearing impaired population that still appear to have unsatisfactory access to telecommunications services; and 4) requiring universal compatibility with telecoil hearing aids could impair the development of new network technology, including fiber optics. Based on this record, it appears that the Congress developed the appropriate public interest balance in the Disabled Act.

6. The Notice of Inquiry also addressed the communications service needs of the deaf and speech-impaired, who access telecommunications services primarily through TDDs. Based on the comments, we seek specific proposals for implementing interstate relay systems of TDDs and seek further information on related issues.

7. Finally, the NOI asked whether an advisory committee should be formed to address issues relating to ensuring reasonable access to telephone service for the hearing-impaired and other disabled persons. Many of the comments indicate that some form of committee is desirable, but it does not seem that a formal federal advisory committee is appropriate. We do not want to foreclose the further participation of any individual or group in this proceeding. Moreover, the comments indicate there currently exist at least two organizations whose memberships include the expertise and the broad-based representation on these issues requested by the commenters desiring establishment of an advisory committee. Accordingly, we encourage these (or other) groups to coordinate the development of consensus proposals that will effectively and efficiently expand access of the disabled to telecommunications equipment and services.

8. We will divide our consideration of the record into four parts: changes to the current rules to expand the category of "essential" telephones; changes to the statute to mandate universal hearing aid compatibility; other matters requiring additional action in the context of a Further Notice of Inquiry; and the possible formation of a federal advisory committee.

CURRENT RULES

9. *Comments.* The comments varied on whether the current provisions of the rules are adequate and whether the Commission should expand the definition of "essential."

10. Self Help for Hard of Hearing People, Inc. (SHHH) is an educational, self-help organization. The majority of its members wear hearing aids. SHHH believes that the current rules have not been more effective because of

(a) continued widespread ignorance of the rules, (b) delegation of enforcement powers to states adopting the rules, and

(c) inadequate consumer participation in implementation of rules provided for their needs. A combination of these three factors adds up to slow progress toward Congressional intent.

SHHH Comments, p. 1.

11. One area of the Commission's rules SHHH feels warrants strengthening involves the workplace. Section 68.112(c)(2) requires employers to provide HAC telephones only at the work stations of employees with a hearing impairment. To ensure such employees have access to a telephone throughout the work premises, SHHH suggests that employers be required to provide either HAC telephones in whatever areas such employees may have reason to visit, or portable external induction coupling devices.

12. Maryland People's Counsel⁸ believes the Commission has not adequately met its Congressional mandate to ensure that *all* the people of the United States have access to communication services. In its view, there is no justification for the Commission establishing a different standard for people with disabilities. The disabled are an integral part of the total population, and share the same problems, family life, and responsibilities as other citizens. MPC thus feels this group should not be segregated and subjected to regulations which limit their access to telecommunications services.

13. MPC believes the definition attached to the term "essential telephones" limits the rights and privileges of the disabled. It feels the term was adopted to meet the needs of the telephone industry, not those of the disabled. Because there is no barrier to preclude the Commission from adopting a broader definition of "essential telephones" and there is a need to expand the availability of communication services for the hearing impaired, MPC recommends that the Commission modify its rules. First it recommends that Section 68.112(c)(1) be modified to include card-operated telephones. Noting that the rule does not require card-operated telephones to be HAC if they are nearby coin-operated telephones, MPC suggests the term "nearby" is relative. To a hearing impaired athlete, it means one thing; to a mobility impaired person, something else.

14. Second, it believes that Section 68.112(c)(2) requires modification, as it now creates a hardship in the workplace. Because the rule requires an employer to place a HAC telephone only at the work station of an employee with a hearing deficiency, the employee's flexibility and mobility are impeded and his usefulness is lessened. To improve employment opportunities and the productivity of such individuals, MPC recommends that Section 68.112(c)(2) be amended to require employers to install HAC

telephones at all sites within the work premises where hearing impaired persons might expect to need a telephone and that all telephones installed on the premises after a certain date be HAC. Third, it suggests that the Disabled Act allows the Commission to require coin- and card-operated telephones to be equipped with amplifier handsets. MPC contends the additional volume is required by many mildly and moderately hearing impaired individuals as well as those with severe hearing problems. In recognition of the importance of amplifier handsets, MPC suggests that the Commission adopt a rule similar to a law enacted by the State of Connecticut, which requires 25% of coin and card-operated telephone to have amplifier handsets.

15. Finding that the cost of HAC telephones is on par with incompatible ones, the supply of HAC telephones has increased and vendors are now familiar with the Commission's rules, MPC suggests that hotels and motels be required to implement a program of annually replacing 10% of their incompatible telephones with HAC units and all new telephone installations be of the HAC variety. Such a program, MPC feels, will result in hotels and motels being completely accessible to wearers of hearing aids equipped with telecoils within a decade, as well as allowing them to receive telephone service at the same rate as other guests.

16. Finally, MPC relates that many inexpensive telephones fail to provide satisfactory performance even though they meet the minimum magnetic field strength levels defined by Section 68.316. This rule defines the magnetic field strength levels a telephone must meet in order to be classified as HAC. To rectify this deficiency it recommends that Section 68.316 be modified to increase the minimum acceptable magnetic field strength level or, alternatively, to increase both the minimum and maximum levels but retain the current numerical difference between the levels.

17. GTE also states that the Commission, based upon a proper record, may broaden the definition of "essential telephones." GTE contends hearing aid users should have greater access to telephones in the workplace than in private homes. It believes all business telephones should be classified as "essential." If the Commission decides not to include residential telephones in the essential category, GTE suggests the Commission may want to strengthen the labeling requirement for non-hearing aid compatible telephones to provide consumers with more information regarding the pros and cons of owning an incompatible telephone.

18. Finally, GTE urges that should the Commission decide to classify business and residential telephones as essential it should grandfather refurbished telephones. GTE estimates that the cost of retrofitting a refurbished telephone to make it hearing aid compatible ranges between \$2.60 and \$4.50, depending upon the style. Imposing this additional cost on refurbishers, GTE maintains, would make refurbishing unattractive because new telephones are becoming less and less expensive, and would probably destroy the refurbishing industry.

19. A report submitted by Gallaudet Research Institute (GRI) discloses that 95 percent of the sample's visually impaired persons were satisfied with their ability to use the telephone, whereas only 20 percent of the hearing impaired and deaf-blind were satisfied.⁹ Fifty percent of the hearing impaired surveyed could not hear using a hearing aid; the other fifty percent could hear and understand normal speech when using an assistive listening

device at least some of the time with some people.¹⁰ In generally outlining the problems which limit access of the disabled to telephone services, the Report does not associate specific problems with a specific disability. However, certain listed complaints naturally attach to the hearing impaired, e. g., "insufficient volume control," "public telephones without amplified handsets" and "should make ringers louder."¹¹ On the specific matter of workplace telephone access, some survey participants claim they experience (1) difficulty obtaining employment, (2) difficulty understanding callers, and (3) problems using some telephones.

20. *Analysis.* Section 610(a) of the Disabled Act, 47 U.S.C. § 610(a), states:

The Commission shall establish such regulations as are necessary to ensure reasonable access to telephone service by persons with impaired hearing.

According to the legislative history, this section of the Disabled Act is intended to direct the Commission's attention to the special communications needs of individuals with hearing impairments. The Commission's mandate to ensure reasonable access to telephone service focuses on establishing regulations and technical standards.

21. While entrusting the Commission with this responsibility, Congress included certain constraints. It enacted Section 610(b) of the Act, which sets limits on the telephones that are to be hearing aid compatible. See note 6, *supra*. At the time it enacted this law, Congress believed its action would reasonably satisfy the needs of the hearing impaired. It noted:

Under no circumstances may the Commission designate as an essential telephone any residential telephone or any other telephone if all the persons who would normally use it do not have hearing impairments.¹²

22. Congress also directed the Commission to evaluate the costs and benefits of any rule changes. That evaluation must also consider costs and benefits to all telephone users, as well as the "social costs and benefits indirectly related to telephone use, including the benefits of reduced institutionalization, increased mobility, and enhanced productivity by disabled persons." House Report, p. 12. Additionally, Congress directed us to ensure that any regulatory changes not impair technological progress.¹³ The language of Section 610(b) and its legislative history clearly provide that the Commission may not require universal hearing aid compatible telephones. However, the Commission may modify its definition of essential telephones so long as it considers the costs and benefits of the changed definition.

23. Most commenters support an expanded definition of essential work place telephones. Section 68.112(c)(2) of the rules only requires that an HAC telephone be made available at the work station of the hearing impaired employee, i. e., "the location within a workplace where that employee is usually found in the course of his or her employment duties." The rule was based on language in the House Report that "[a]n employee should have access to at least one compatible telephone" House Report at 10. But that report also stated "[t]he Committee is concerned that inability to use telephones should not im-

pair the productivity of persons using a hearing aid in their place of work." *Id.* We now propose a rule change to expand the areas where workplace telephones must be HAC to include all common areas that hearing impaired employees may need to access in the ordinary course of their employment. These would include telephones in library, reception, and similar areas. We seek comment on the costs and benefits of this proposal. We also ask what, if any, grandfathering would be appropriate. See 47 U.S.C. § 610(f).

24. We also propose a rule change to require HAC for credit card telephones. Section 68.112(c)(1) of the rules currently provides that such telephones generally must be hearing aid compatible, "unless a hearing aid compatible coin-operated telephone providing similar services is nearby and readily available." The "unless" clause was based on the Commission's interpretation of language in the House Report: "The Committee intends that the Commission employ a common-sense approach; if a usable pay phone is nearby and readily available, the incompatible instrument is not 'needed by the hearing impaired'." House Report at 10. Although MPC has not identified any specific instances where a non-HAC credit card telephone has precluded access to telephone services, our preliminary view is that the benefits of deleting the clause outweigh the costs. As MPC argues, the use of credit card telephones is growing. In addition, the factor governing whether a credit card telephone need be HAC — whether a coin-operated HAC telephone is "nearby and readily available" — is difficult to define or enforce. Congress felt so strongly that coin-operated telephones should be HAC that it mandated retrofitting, where necessary. Our records show 12 models of credit card telephones have been registered under Part 68 since 1982, and 10 clearly are HAC. Two applications were granted which did not affirmatively state the telephones were HAC, but it is not clear that the telephones in question are not HAC, and if they are not, what costs would be incurred to make them so. Accordingly, we propose to delete the "unless" clause from Section 68.112(c)(1). We seek comment on the costs and benefits of this proposal. In the event manufacturers are producing and selling non HAC credit card telephones, we ask that they document any costs that would be incurred by our proposal, and state what level of grandfathering protection would be appropriate. See 47 U.S.C. § 610(f); House Report at 13.

25. MPC suggests that all new hotel and motel telephones eventually be HAC. There is no indication that the current provisions are not adequate to ensure access by hearing impaired persons to hotel and motel HAC telephones. Therefore, we do not propose at this time to amend that portion of the rule.

26. Thus, we propose two specific changes to our rules to increase the availability of HAC telephones. We also are seeking additional information in our further inquiry on a number of the other suggestions made by commenters.¹⁴

STATUTORY CHANGES

27. *Comments.* The comments varied on whether we should recommend that the Congress amend the Disabled Act to require that all telephones be hearing aid compatible.

28. SHHH argues such an amendment would disserve the hearing impaired community because as now structured, the proposed legislation would exempt telephones from the HAC standard if they are not required to be registered under Part 68 of the Commission's rules. 47 C.F.R. Part 68. Falling in this category are coin telephones owned by telephone companies. On the other hand, current legislation requires all coin operated telephones to be compatible. SHHH states that the philosophy of "choice" is deeply rooted in our society. It then suggests that the hearing impaired could minimize their problems by educating those persons who buy incompatible telephones to this group's needs rather than seeking federal legislation which eliminates consumer choice.¹⁵

29. Several commenters state that economical specialized telephone equipment designed for the hearing impaired mitigates the need and demand for HAC telephones. For example, the American Telephone and Telegraph Company (AT&T) notes that it offers the Portable Telephone Amplifier through its National Special Needs Center and Phone Centers. This device sells for approximately \$24.95 and easily attaches to any telephone. It transforms an incompatible telephone to a HAC unit or provides 20 dB additional amplification for wearers of hearing aids not equipped with telecoils. It also offers an amplifier handset which may be used with earlier model telephones.

30. AT&T states that, with the exception of its cordless telephones, all telephones it supplies are HAC. To make its cordless units HAC, AT&T claims it would cost an additional \$1.50 per unit. Otherwise, a rule requiring universal HAC would not alter its manufacturing costs. It explains it has embedded costs of \$0.25 per corded telephone to accommodate HAC.

31. Commenters also argue that requiring universal compatibility could impede innovation which could lower prices and could impede the introduction of new technology. AT&T argues that such a rule could impose additional costs of \$0.50 to \$1.00 for all future telephones and imposition of technical standards on telephone manufacturers could be useless unless similar standards are imposed on hearing aid manufacturers. Without such there is no guarantee that hearing aid technology will always mesh with that of telephones. Bell Atlantic Telephone Companies contend generally that hearing aid and telephone technologies are changing rapidly and therefore regulatory requirements should not be imposed making their future application impractical. Bell South maintains that the best approach to the issue is one which allows the marketplace to respond to the needs of the disabled. This view is also shared by United States Telephone Association (USTA).

32. MPC recommends that the Commission support legislation now before Congress to require all new telephones to be hearing aid compatible. It feels that, if enacted, such legislation would enable hearing impaired persons to have the same access to the telecommunications network as others, would relieve the Commission of certain monitoring and enforcement responsibilities, and would eliminate the restraining language of Section 610(b) of the Disabled Act.¹⁶

33. Other commenters also endorse requiring future telephones to be HAC.¹⁷ Ameritech Operating Companies say they do not anticipate any impediments to development and growth of their networks as a result of such a rule. They caution, however, that such a requirement should contain a proviso making HAC mandatory and

uniform on a national basis. Otherwise, incompatible technology might be developed resulting in future stranded plant investment. GTE Service Corporation (GTE) also favors the idea. It discloses that its unit costs for HAC telephones (including cordless ones) range between \$0.20 - \$0.50. But, it notes, the true cost of such a rule includes more than the unit cost. Legislating a design parameter might impede network technological advances, resulting in a cost too high to pay. Thus, it recommends that the Commission, in evaluating the costs/benefits of universal HAC, may wish to adopt a "sunset" provision on the HAC requirement which would force a review of the "costs/benefits" to determine whether technological changes warrant retention of the rule. For example, hearing aids' design could advance to the point where magnetic coupling with the telephone would no longer be necessary. In GTE's view, by allowing exceptions to a universal HAC rule, the Commission would be operating within Congressional intent to permit the manufacturing and marketing of telephones incompatible with hearing aids. According to GTE, not only was the intent of the legislation to define essential telephones, but also to allow for the production and retail of incompatible telephones. Without a statutory change, GTE urges, the Commission cannot impose a 100% HAC requirement.

34. Commenters were asked to provide specific statistical data regarding hearing aids and their wearers. All data supplied appear to be based on information originally collected by HIA. In view of that, there is little variation in the information supplied by the parties. Other than the total number of users requiring hearing aids equipped with telecoils, a datum commenters state is indeterminate, the table below display the information requested by the NOI.

TABLE 1

	Total No. of aids sold	Fraction of aids with Telecoils	Total No. of ITE aids sold
1982	854,485	48.5%	359,027
1983	1,029,680	43.5%	508,652
1984	1,102,887	37.8%	638,748
1985	1,136,864	33.6%	730,310
1986	1,268,142	29.5%	893,952
Total	5,392,058	37.7%	3,130,689

	Fraction of ITE aids with Telecoils	Total No. of non-ITE aids sold	Fraction of Non-ITE aids with telecoils
1982	10.1%	495,458	76.3%
1983	10.1%	521,028	76.1%
1984	10.1%	464,139	75.9%
1985	10.1%	406,554	75.8%
1986	10.1%	374,196	75.8%
Total	10.1%	2,261,369	76.0%

Total number of hearing aid users 4.0 million a

Total number of users employing
ITE aids 2.3 million b/

Estimated number of users employing
telecoils 1.5 million c/

a/ SHHH comments, p. 6.

b/ SHHH comments, p. 5.

c/ Computed by staff. (2.3 million ITE aid users x 10.1%
+ 1.7 million non-ITE aid users x 76%)

35. Interpretation of the above data varies among the commenters. Our NOI, based on previous available data, stated that the number of hearing aids purchased incorporating the telecoil feature seemed to be declining. SHHH states that the figures show a decline in the retail of telecoil equipped hearing aids. It attributes this reduction to wearers being unfamiliar with that feature of their hearing aids, their refusal to use it or their lack of knowledge of how to use it. HIA also credits the reduction of telecoil equipped hearing aids to the emergence of the in the ear hearing aid model. According to HIA, these units generally are purchased by persons experiencing little difficulty using the telephone. Consequently, they are buying hearing aids without the inductive feature. Accordingly, HIA notes that less than 30% of hearing aid purchasers are buying hearing aids with telecoils. "the necessary other half of the hearing aid compatibility equation."

36. MPC maintains that the purchase of hearing aids actually fluctuated from year to year during the 1980-1985 period. This fluctuation reflects, according to MPC, the variation of incidence of severe hearing loss as opposed to a decreasing trend of relying on inductive reception. Only when there is a decrease in the number of severely hearing impaired or a superior alternative coupling will there be a substantial reduction in the number of hearing aids equipped with telecoils, asserts MPC. MPC observes that in the period 1980 - 1986, approximately 2,865,000 telecoil equipped hearing aids were sold. It argues Congress did not predicate its enactment of the Disabled Act on percentages. Congress was concerned with ensuring that people have reasonable access to telephone service. GTE believes the number of telecoil equipped hearing aids is relatively stable and represents those persons having severe or profound hearing loss. Accordingly, they need HAC telephones and GTE thus urges the Commission to recognize their needs.

37. AT&T, on the other hand, believes MPC's argument does not rebut the inferences the statistics suggest. It explains that it is unlikely that the number of hearing impaired will rise and fall from year to year. The suitability

ity of ITE models for the moderately hearing impaired might explain the declining trend in the sale of telecoil equipped hearing aids.

38. None of the commenters identified any anticipated technological advances that would enhance the access to telecommunications services by the hearing impaired. GTE states that regulating technology can be counter-productive without safety valves. Although it is true the telephone network is evolving into a digital network, GTE concludes this does not preclude telephone receivers from generating an adequate magnetic field for coupling with hearing aids. It explains that the human ear is an acoustic input device, which will not be affected by network changes. Regardless of the technology used the final output must be in acoustic energy, it continues. GTE suggests what is most likely to happen is that hearing aid designs will improve to permit acoustic coupling without the adverse feedback prevalent among today's hearing aids. Such a feat would moot the need for HAC telephones.

39. HIA, an organization of firms that manufacture and distribute hearing aids and their component parts, notes that its industry remains committed to the availability of induction coil compatible telephone handsets and hearing instruments. GRI relates that there is no inductive technology substitute on the horizon. Based on its clinical experience, magnetic coupling is the most effective means for the moderately hearing impaired to use the telephone without feedback. GRI further explains that because it is impractical to directly, electrically connect telephones and hearing aids, direct audio input is infeasible.

40. *Analysis.* Although it is clear that the hearing impaired currently are unable to fully utilize telecommunications services, the record before us does not indicate that universal HAC will provide a significant improvement in the ability of the hearing impaired to access telecommunications services. The comments indicate that there would be an increased embedded cost of between \$.25 to \$1.50 per non-HAC telephone if Congress were to mandate universal compatibility. In addition, it appears that the use of hearing aids with the telecoil device is on the decline and non-telecoil equipped hearing aids are improving. Universal HAC would also restrict the freedom to design innovative telephones, but the cost of that restriction cannot be quantified with the record before us. Further, as stated above, there are inexpensive alternative portable devices available to enhance the ability of persons with hearing disabilities while using a standard telephone. Finally, it is not clear that such an amendment would address the actual problems being experienced by the segment of our hearing impaired population that still appear to have unsatisfactory access to telecommunications services. After carefully balancing all the facts in the record before us, we reach the same conclusion as did Congress in enacting the Disabled Act; that it does not appear that mandatory universal compatibility would serve the public interest.

FURTHER NOTICE OF INQUIRY

41. The comments indicate there are a number of areas in which a further proceeding may enhance the access of the hearing impaired and other disabled persons to telecommunications services.

42. We seek comment on a number of issues: (1) whether we should propose rules regarding Telecommunications Devices for the Deaf;¹⁸ (2) whether we should propose to amend the rules with regard to amplifier handsets; and (3) whether other rule changes are appropriate.

43. *TDDs - Comments.* Based on the comments filed, only AT&T among interstate carriers currently provides special operator services for TDD users.¹⁹ These services include operator assistance for aiding TDD users in making AT&T credit card calls, third number billed calls, collect calls, person-to-person calls and calls from hotels and motels. In addition, TDD users are offered help in reaching directory assistance operators and provided typed messages of information received from recorded messages. These services are available via a toll free number and accessible 24 hours per day. One additional carrier, U.S. Sprint, does plan to offer this kind of operator service, but does not plan to offer disabled TDD users discounted rates.

44. For the present, GTE maintains that there is a need to standardize the code for TDD devices. Currently two coding schemes are used by TDD manufacturers, Baudot and ASCII. Baudot is the original format incorporated in TDDs and is the least expensive because the equipment is typically older and less complex than ASCII. ASCII is more widely employed among terminal devices, including TDDs and personal computers. Because of its wide use and the possible enlargement of the community TDD users could access, GTE recommends that the Commission require future TDD units incorporate the ASCII format. Electronic Industries Association (EIA), on the other hand, suggests the issue be directed to a user group such as the Telecommunications for the Deaf, Inc., while SHHH urges the Commission to permit the matter to be resolved on a voluntary basis.

45. A number of commenters addressed questions relating to relay services for TDD users, which generally enable TDD users to have telephone conversations with voice telephone users. A few states are offering or are in the final stage of providing manned relay services²⁰ for TDD users. California provides a system, and, according to the comments, Illinois' and New York's systems should be functional shortly. With the exception of the New York proposal, these programs limit the users to intrastate calls. New York plans to permit interstate calls over its system so long as one end of the conversation is in New York. In addition to these relay systems, there are many private organizations providing manned relay services. To further ease the expense of communicating via these relay systems, some states have ordered carriers providing intrastate toll services within their states to provide such services to TDD users at a discounted rate. On the interstate level, only AT&T offers toll discounts to TDD users. Some of its competitors indicate they would offer discounted rates if they were subsidized, presumably by other ratepayers.

46. Several user groups discuss the problems attendant to existing and planned intrastate manned relay systems. They relate that many users are disappointed and do not understand why communication cannot be established with out-of-state locations. Efforts to obtain these services by state commissions and local telephone companies have been met with jurisdictional disputes, notes MPC. According to MPC, both parties (state commissions and telephone companies) argue that local public utility commissions do not have authority to order telephone

companies to provide interstate relay services. This denial of interstate service has meant many deaf individuals have been denied access to relatives and friends in other states. To remedy the problem, NARUC, in a petition for further inquiry, asks that the Commission (a) establish the committee discussed in its NOI to investigate the implementation of interstate relay systems and (b) issue a further notice of inquiry to obtain specific proposal for the committee's evaluation.

47. With regard to possible technological advances affecting relay systems, AT&T reveals that it and other firms are conducting tests on unmanned relay systems designed to recognize speech and transform it to written form and vice-versa. But it indicates the pace of development does not offer any immediate hope of employing this system soon.

48. The Architectural and Transportation Barriers Compliance Board states it is an independent federal regulatory agency charged with insuring that certain facilities designed, constructed, altered or leased with federal funds comply with accessibility standards issued under the Architectural Barriers Act of 1968. It offers to serve on any advisory board the Commission may establish. It states it has sponsored a demonstration, federal government wide TDD relay service since August 1986 that is to expire August 1988. The service is used by federal employees who are TDD users and by others who communicate with those employees, both inside and outside the government. The relay serves approximately 700 persons each month. The board intends to explore the possibility of another organization, either government or nongovernment, administering the relay service as an ongoing activity.

49. None of the commenters revealed any technological advances likely to have an immediate impact on the way communication services are provided the deaf and speech impaired. Some did note that research is under way to take advantage of research conducted in the computer field to improve the communication ability of the deaf. GTE is also conducting some tests. It is attempting to devise a technique which would allow transmitting American Sign Language using a voice grade line and slow speed video techniques.

50. - *Analysis.* Based on this record, we seek specific proposals for an interstate relay system for TDD users. We also believe commenters have raised other issues deserving of further comment by interested parties.

51. The record shows that a number of telephone companies have available an array of devices specifically designed to assist the deaf in accessing the telephone network. Many states also maintain programs which provide equipment for the disabled at little or no cost to the users. Only AT&T offers discounted interstate toll rates and operator services for TDD users. Its competitors explain they would provide discounted rates for TDD users if they were subsidized in some manner.

52. More generally, since the development of the basic TDD system 20 years ago ASCII terminal technology and modern technology have advanced significantly to the point where low cost, personal computers with modems (which can serve as ASCII TDDs) are mass produced consumer items which may have lower cost than traditional TDDs. In addition, packet switching technology has also progressed to the point where it may provide long distance connectivity for typing at a significantly lower cost than MTS. However, no packet switching provider presently offers end to end services that are appropriate for

the TDD user. We also note that if the TDD users were to migrate to the more common ASCII technology they would be able to communicate with millions of such terminals in residences and businesses.

53. Generally available relay services appear to restrict users to intrastate use. In this proceeding several parties, including EIA and SHHH, argue the Commission should defer the matter to private organizations for resolution. Others, including MPC, GRI, NARUC and some private citizens, seek Commission action to create an interstate relay system for TDD users. NARUC points out that as many as 15 states have plans for an intrastate TDD relay system. It urges the Commission to develop a federal policy on interstate relay systems to achieve coordination and consistency in the development of intra-and interstate systems.

54. An effective interstate TDD system has the potential to substantially improve access by the deaf to telecommunications services. The question is what is the most efficient, cost effective way of facilitating one. There are no specific proposals before us at this time. To conduct the sort of cost/benefit analysis Congress intended, we solicit the submission of specific proposals.

55. We believe the current record must be supplemented with data regarding the technical, economic and regulatory parameters for an interstate system. Specific, detailed proposals for an interstate relay system that can be used by all, or most, TDD users, i.e., users with Baudot or ASCII format units must be developed. The proposals should include technical requirements and should indicate what organization would establish standards. Proposals should be offered on ways to foster Baudot-ASCII compatibility. In light of the research and development underway to discover means of implementing an unmanned relay system, each proposal should consider the means of phasing in possible replacement of manned stations with unmanned facilities. We specifically seek comment on the feasibility of developing packet switched services based on new or existing packet switched networks that could provide low cost connectivity for Baudot and ASCII TDD users. In addition, commenters are asked to discuss the roles of all the entities anticipated to be a part of rendering the service, including private organizations currently providing service. The roles of interstate carriers in particular should be addressed.

56. Proposed plans should incorporate an economic assessment of the impact such a system would have on ratepayers. The record suggests that potential users of the system will require a subsidy. The economic analysis should discuss the amount of subsidy, the form it should take, and a cost/benefit study showing the number of persons benefiting and the specific ways they will benefit. Suggested rates for use of the system would further assist the assessment of implementing such a system. Potential users supporting implementation of an interstate relay system are invited to also comment on their anticipated use of an interstate system and features they feel are necessary to enhance their access to their community of interest.

57. Finally, all plans must include proposed regulations applicable to the use and operation of an interstate system. The Commission's ability to mandate an interstate TDD relay system and establish a funding mechanism for it appears to raise new and novel questions of law. Accordingly, we request comment on our statutory authority to mandate and fund such a system.²¹ Proposed regulations should include user eligibility requirements, common

carrier responsibilities, details regarding the administrative operation and the organizational structure if the plan envisions a system to be governed by a body other than the provider of the service. Any expected limitations deemed necessary should be highlighted and accompanied with an explanation.

58. *Amplifier Handsets.* As indicated above, both MPC and the GRI Report indicate a need for more amplifier handsets.²² MPC states that "[a]ugmented volume is needed by a great many mildly and moderately hearing-impaired people as well as those who are severely or profoundly impaired and use the extra amplification to supplement their inductive reception." MPC comments, p. 4. To assist this group of impaired persons, MPC requests a rule modification requiring at least 25 percent of coin- and card-operated telephones to be equipped with an amplifier.

59. We do not have sufficient facts upon which to conduct a cost/benefit analysis, as intended by Congress.²³ Therefore, we seek comment on the following: The size of the population the rule would address, the number of handsets involved, or the total cost to industry to comply with such a regulation, and the type of amplification (speech, hearing or both) necessary to resolve the perceived problems.²⁴ In addition, the GRI study notes other access problems that would not be remedied by amplifier handsets. These include such things as reaching a handset and the need for push button telephones. We seek comment on whether requiring all interstate pay telephones to be push button would be more beneficial to a greater number of people than requiring amplifier handsets.

60. *Other Issues.* The Gallaudet study raises some particular suggestions for other changes. Twenty four percent of those interviewed suggested improving accessibility of the disabled can be accomplished by lowering placement of public telephones for wheel chair use, Telecommunications Devices for the Deaf in all public places, portable TDD telephones and amplified handsets "everywhere." We ask commenters to address each of these proposals in their further comments. Although the Disabled Act focuses on measures to assist the hearing impaired, a substantial number of commenters address issues of importance to the deaf, speech impaired and other disabled persons. We also seek comment on other appropriate rule changes.

61. For example, analysis of the GRI study raises the question of how often the problems cited occur or whether the hearing impaired are attempting to use "non-essential" telephones because they lack knowledge regarding HAC regulations. Although our current hearing aid compatibility rules have been in effect for nearly four years, SHHH argues there is no general awareness of their existence and intent by the general public, including many members of the hearing impaired community. SHHH suggests that greater efforts be extended by organizations representing the hearing impaired and the Commission to educate the public on this matter. In other words, it appears that it could be a lack of knowledge of the rules by those who must comply with them and those who are designed to benefit from them (and are in the best position to know if they are being observed) that contributes to the rules being less effective than they should be.

62. To further advance access by the hearing impaired to telephone services, we request that commenters consider plans that they believe will achieve greater dissemination of information related to our rules. We also ask

them to define what the Commission's role in such activities should be and to include cost estimates for distribution of necessary information. We would be especially interested in knowing of complaints filed with the states alleging noncompliance with the rules. Analysis of such complaints would provide a base from which to determine patterns of noncompliance and could indicate an education program that could target such problems.

63. There is little information on record concerning the hearing aid's role in these matters. It would certainly appear to play an integral role in the way the hearing impaired access telephone service. An assessment of how the quality of the hearing aid relates to the user's ability to access the telephone or use telephone services is required to determine what Commission action is appropriate. Further, it would be helpful to know if efforts are underway to standardize the hearing aid telecoil performance requirements, and the levels being proposed. Also, commenters should consider the need for greater dissemination of information to consumers relating to the hearing aid's usefulness in telephone conversations, the merits of grading hearing aids for telephone use and offer suggestions on how, and by whom, such information can be distributed. If the marketplace for hearing aids is workably competitive, compatibility with telephone use should be an important point of product differentiation. Manufacturers should have incentives to enhance the compatibility of aids with the telephone. In fact, we note the percentage of in-the-ear devices with telecoils has increased (Table 1, *infra*).

ADVISORY COMMITTEE

64. *Comments.* The NOI suggested that the issues that must be addressed to improve disabled persons' access to telecommunications services may be more appropriately handled by a committee comprised of various interested parties. It was suggested that such a committee could operate under the auspices of the Exchange Carriers Standards Association (ECSA) or the EIA. Both of these organizations indicate that these matters may be more suitably addressed by some other organization.

65. Most of the commenters favor the creation of this committee. But many urge that the efforts of the committee not be focused exclusively on the needs of the hearing impaired and the deaf. There are other persons with disabilities that impede their access to telephone services. As noted by GRI, there are issues of like importance for persons with speech, vision and mobility impairments. Some individuals have several disabilities. In addition, technological changes and different governments' actions make these issues even more complex. Many of those favoring the formation of a committee recommend that the Commission establish a Federal Advisory Committee on Telecommunications and the Disabled. Proposed membership should consist of representatives from the telephone industry, disabled consumers, state regulatory commissions, manufacturers of specialized customer premises equipment, audiologists, rehabilitation engineers, and Commission personnel. According to GRI, the committee's functions should include:

tracking and informing the Commission of developments, including technological advances, that affect access to telecommunications for disabled people; considering and debating policy options; advising on

development of regulations; recommending the creation of ad hoc working groups outside the FCC; [and] defining research needs.

Gallaudet Research Institute Comments, pp. 8-9.

66. According to some proponents, there exist two organizations, Future of Induction Technology (FIT) and Telecommunications for Hearing Impaired Consumers Forum (THIC), that could serve as the nucleus of the proposed committee. Each of these organization's membership is composed of the representatives of interests deemed essential for successful operation. According to SHHH, FIT brings together members of the hearing aid and telephone industries, government, consumers and others to investigate any technology that gives the promise of providing greater accessibility to the consumer. MPC describes THIC as a forum that has met semi-annually for more than a decade for consultative and information exchange purposes. Its membership is similar in composition to FIT. USTA urges that any committee formed should have a defined organizational time frame, a balanced membership and meet the requirements of the Federal Advisory Committee Act, 5 U.S.C.S. Appx. 2.

67. EIA details its involvement in matters leading to services for the hearing impaired and handicapped. However, at this juncture, it does not see the need for the proposed committee. It implies that the Commission's objective could be achieved by merger of FIT and THIC (EIA being an active member of both) on a coequal basis.

68. In their reply comments, NYNEX (New York Telephone Company and New England Telephone and Telegraph Company) oppose the idea of creating a committee under the auspices of ECSA. ECSA, they indicate, does not deal with issues related to the subject matter. Although NYNEX is not opposed to formation of a committee if operated under some other entity, it feels the issues raised are being resolved with consumer premises equipment and normal telephone calls. Therefore, the need for the committee is not that great.

69. PTC concludes that the charter of any committee formed should not include questions regarding pay telephone modifications. However, should such issues be forwarded to a committee, PTC would be a willing participant. Other parties filing replies think the idea has wide support and recommend that the Commission establish a committee.²⁵

70. *Analysis.* The commenters generally agree that some sort of committee is appropriate. The comments vary, however, regarding what form that committee should take. Under the Federal Advisory Committee Act, Public Law No. 92-463, (FACA), new advisory committees should be established only when they are determined to be essential and their functions cannot be performed by Commission staff or by an existing committee. We cannot conclude at this time that forming a committee pursuant to FACA is essential. Rather, we believe that it would be more appropriate to seek comments from all interested parties. We note, however, that FIT and THIC are existing groups whose memberships include the type of representation suggested by those commenters supporting establishment of a Commission-sponsored committee. There are indications the FIT and THIC have considered some of the issues pertinent to the disabled's access to telecommunications services and equipment. We encourage these (or

other) groups to coordinate the development of consensus proposals to facilitate Commission consideration for further action.

71. As is noted above, NARUC specifically requested that a further NOI be initiated to consider implementation of an interstate TDD system. We have asked that interested parties submit specific proposals in this next stage of our inquiry. As explained above, many details will have to be considered, such as the extent of the need for such a system, the costs of operating it, the financial scheme to make it viable, qualifications for use, regulations pertaining to its operation and the Commission's role.

72. We encourage the parties to discuss the matters raised herein among themselves before comments are filed so that effective and efficient means are identified to enhance access by the disabled to telecommunications equipment and services. To aid in this regard, we are including the mailing addresses of the commenters in this proceeding. Greater interaction among interested parties, such as those participating in this proceeding, is likely to enhance access by the disabled.

CONCLUSION

73. Although it is clear that the disabled do not have the same access to telecommunications equipment and services enjoyed by others in society, identifying effective remedial measures is a difficult matter. Section 610 of the Communications Act and our implementing regulations are an attempt to assist one segment of the disabled – the hearing impaired. We believe the fairest reading of the Congressional history of Section 610 is that it is a careful balance of a number of competing interests, and that changes in our rules should not be made unless we are confident, on the basis of a careful cost/benefit analysis, that the changes would be effective and efficient. Upon preliminary analysis two proposals – requiring all credit card telephones to be hearing aid compatible and expanding hearing aid compatible workplace telephones to include telephones in common areas the hearing impaired are likely to access in the ordinary course of their employment – seem to offer benefits that outweigh likely costs. We are unable to make that finding with respect to the various proposals before us on the basis of the comments filed to date. Therefore, we seek further comment on what additional steps are appropriate.

74. Accordingly, pursuant to Sections 4(i) and 4(j) of the Communications Act of 1934, as amended, IT IS ORDERED that a Further Notice of Inquiry and Notice of Proposed Rule Making IS INSTITUTED.

INITIAL REGULATORY FLEXIBILITY ANALYSIS

75. In accordance with the Regulatory Flexibility Act of 1980, 5 U.S.C. § 601, the Commission issues the following initial regulatory flexibility analysis:

A. Action Contemplated and Reason for Action

76. By this NPRM, the Commission seeks to elicit comment on a proposal to change its rules to provide the hearing impaired with greater access to telecommunications services.

B. Objective

77. The objective of this Rule Making is to fulfill the intent of Congress.

C. Legal Basis

78. The legal authority for this action is contained in Sections 1 and 4(i) of the Communications Act, 47 U.S.C. § 151 and 154(i).

D. Description, Potential Impact and Number of Small Entities Affected.

79. The effect of the proposed rules will depend upon whether businesses and manufacturers currently are using hearing aid compatible telephones and what amount of grandfathering they demonstrate is appropriate. The overall economic impact of the proposed rules should be small.

E. Recording, Recordkeeping, and Other Compliance Requirements.

80. No additional burdens anticipated.

F. Federal Rules that Overlap, Duplicate or Conflict with these Proposed Rules

81. None.

G. Any Significant Alternatives to Minimize the Impact on Small Entities.

82. None.

ADMINISTRATIVE MATTERS

83. In accordance with the applicable procedures set forth in Section 1.415 of the Commission's Rules, 47 C.F.R. § 1.415, interested parties may file comments on or before July 26, 1988, and reply comments on or before September 9, 1988. All relevant and timely comments will be considered by the Commission before final action is taken in this proceeding. In reaching its decision, the Commission may take into consideration information and ideas not contained in the comments, provided that such information or a writing indicating the nature and source of such information is placed in the public file and provided that the Commission's reliance on such information is noted in the Report and Order.

84. Interested parties shall file an original and 5 copies of all comments, replies, or other documents. Participants wishing each Commissioner to have a personal copy of their comments should file an original and 11 copies. Members of the public who wish to express their interest by participating informally in the Rule Making proceeding may do so by submitting one copy of the comments provided that the docket number is specified in the heading. All filings in this proceeding will be available for public inspection by interested persons during regular business hours in the Commission's Public Reference Room at its headquarters, 1919 M Street, N.W., Washington, D.C. For general information on how to file comments, parties should contact the FCC Consumer Assistance and Information Division at (202) 632-7000.

85. For purposes of this non-restricted notice and comment Rule Making proceeding, members of the public are advised that *ex parte* presentations are permitted except during the Sunshine Agenda period. See generally Section 1.1206(a). The Sunshine Agenda period is the period of

time which commences with the release of a public notice that a matter has been placed on the Sunshine Agenda and terminates when the Commission (1) releases the text of a decision or order in the matter; (2) issues a public notice stating that the matter has been deleted from the Sunshine Agenda; or (3) issues a public notice stating that the matter has been returned to the staff for further consideration, whichever occurs first. Section 1.1202(f). During the Sunshine Agenda period, no presentations, *ex parte* or otherwise, are permitted unless specifically requested by Commission or staff for the clarification or adduction of evidence or the resolution of issues in the proceeding. Section 1.1203. In general, an *ex parte* presentation is any presentation directed to the merits or outcome of the proceeding made to decision-making personnel which (1), if written, is not served on the parties to the proceeding, or (2), if oral, is made without advance notice to the parties to the proceeding and without opportunity for them to be present. Section 1.1202(b). Any person who submits a written *ex parte* presentation must provide on the same day it is submitted a copy of same to the Commission's Secretary for inclusion in the public record. Any person who makes an oral *ex parte* presentation that presents data or arguments not already reflected in that person's previously-filed written comments, memoranda, or filings in the proceeding must provide on the day of the oral presentation a written memorandum to the Secretary (with a copy to the Commissioner or staff member involved) which summarizes the data and arguments. Each *ex parte* presentation described above must state on its face that the Secretary has been served, and must also state by docket number the proceeding to which it relates. Section 1.1206.

86. As required by Section 603 of the Regulatory Flexibility Act, we have prepared an initial regulatory flexibility analysis (IRFA) of the expected impact of these proposed policies and rules on small entities. Written comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of the Notice, but they must have a separate and distinct heading designating them as responses to the regulatory flexibility analysis.

87. Accordingly, pursuant to the authority contained in Sections 1 and 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151 and 154(i), IT IS PROPOSED that the amendments to Part 68 of the Commission's rules set forth in Appendix A be adopted.

88. The Secretary shall cause a copy of this Notice, including the initial regulatory flexibility analysis, to be sent to the Chief Counsel for advocacy of the Small Business Administration in accordance with Section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. § 603(a) (1981). The Secretary shall also cause a summary of this Notice to appear in the Federal Register.

FEDERAL COMMUNICATIONS COMMISSION

H. Walker Feaster, III
Acting Secretary

APPENDIX A

Section 68.112 is amended by revising current paragraphs (c)(1) and (c)(2) to read as follows:

§ 68.112. Hearing aid-compatibility

(c) Telephones frequently needed by the hearing impaired.

(1) Any telephone for which calls may only be paid for by credit card or other pre-arranged credit.

(2) Any telephone made available at the work station or in common areas used by a hearing impaired employee for use by that employee in his or her employment duty. An employee's "work station" is defined as the location within a workplace where that employee is usually found in the course of his or her employment duties. "Common areas used by a hearing impaired employee" include libraries, reception areas and other similar locations the employee may need to access in the course of his or her employment duties.

APPENDIX B**Parties Filing Comments**

Alexander Graham Bell Association for the Deaf
3417 Volta Place
Washington, D.C. 20007-2778

American Speech-Language-Hearing Association
10801 Rockville Pike
Rockville, MD 20850

American Telephone and Telegraph Company
295 North Maple Avenue
Basking Ridge, NJ 07290

Ameritech Operating Companies
30 South Wacker Drive
Chicago, IL 60606

Bell Atlantic Telephone Companies
1710 H Street, N.W.
Washington, DC 20036

Bell South Corporation,
South Central Bell Telephone Company,
and Southern Bell Telephone and
Telegraph Company
4300 Southern Bell Center
675 West Peachtree St., N.E.
Atlanta, GA 30375

Electronic Industries Association,

Information and Telecommunications
Technologies Group, User Premises Equipment
Division
2001 Eye Street, N.W.
Washington, DC 20006

Exchange Carriers Standards Association,
Standards Committee T-1
Bell Communications Research
331 Newman Springs Road
Red Bank, NJ 07701

Gallaudet Research Institute
800 Florida Avenue, N.E.
Washington, DC 20002

Gallaudet University
800 Florida Avenue, N.E.
Washington, DC 20002

GTE Service Corporation
1850 M Street, N.W.
Suite 1200
Washington, DC 20036

Hearing Industries Association
1255 23rd Street, N.W.
Washington, DC 20037

Maryland's People Counsel: Hearing and Speech Agency
of Metropolitan Baltimore, Inc.; Maryland Department of
Health and Mental Hygiene; Maryland Governor's Com-
mission on Hearing Impairments; Maryland Governor's
Office for Handicapped Individuals; National Center for
Law and the Deaf; Organization of Use of the Telephone,
Inc.; and Telecommunications Exchange for the Deaf, Inc.
American Building, Ninth Floor
231 East Baltimore Street
Baltimore, MD 21202

Mountain States Telephone and
Telegraph Company,
Northwestern Bell Telephone Company,
and Pacific Northwest Bell Telephone Company
1020 19th Street, N.W.
Suite 700
Washington, DC 20036

National Association of Regulatory
Utility Commissioners
1102 ICC Building
P.O. Box 684
Washington, D.C. 20044

New York State Department of Public Service
Three Empire State Plaza
Albany, NY 12223

Pacific Bell
444 North Capitol Street, N.W.
Suite 718
Washington, DC 20001

People of the State of California
and the Public Utilities Commission of the
State of California
505 Van Ness Avenue
San Francisco, CA 94102

Public Telephone Council
c/o Pierson, Ball & Dowd
1200 18th Street, N.W.
Washington, DC 20036

Self Help for Hard of Hearing People, Inc.
7800 Wisconsin Avenue
Bethesda, MD 20814

Southwestern Bell Telephone Company
1010 Pine Street, Rm. 2305
St. Louis, MO 63101

United Telephone System Companies
1875 Eye Street, N.W.
Suite 1250
Washington, DC 20006

United States Telephone Association
900 19th Street, N.W.
Suite 800
Washington, DC 20006-2102

U.S. Spring Communications Company
1850 M Street, N.W.
Suite 1110
Washington, DC 20036

Parties Filing Reply Comments
American Telephone & Telegraph Company
Bell Atlantic Telephone Companies
GTE Service Corporation

MCI Telecommunications Corporation
1133 19th Street, N.W.
Washington, DC 20036

Maryland's People Counsel: Hearing and Speech Agency
of Metropolitan Baltimore, Inc.; Maryland Department of
Health and Mental Hygiene; Maryland Governor's Com-
mission on Hearing Impairments; Maryland Governor's
Office for Handicapped Individuals; National Center for
Law and the Deaf; Organization of Use of the Telephone,
Inc.; and Telecommunications Exchange for the Deaf, Inc.

NYNEX Telephone Companies
(New York Telephone Company and
New England Telephone and Telegraph Company)

120 Bloomingdale Road
White Plains, NY 10605

Pacific Bell
Public Telephone Council
Southwestern Bell Telephone Company

United States Architectural and
Transportation Barriers Compliance Board
330 C Street, S.W.
Washington, DC 20202

FOOTNOTES

¹ Access to Telecommunications Equipment by the Hearing Impaired and Other Disable Persons, *Order*, CC Docket No. 83-427, 49 Fed. Reg. 1352 (January 11, 1984), *modified*, 49 Fed. Reg. 19666 (May 9, 1984), *further modified*, FCC 84-382 (released August 13, 1984), and 47 C.F.R. Part 64, subpart F, Sections 68.4, 68.112, 68.224 and 68.316. The Disabled Act is codified at 47 U.S.C. § 610. The Cable Communications Policy Act of 1984, Public Law No. 98-549, redesignated the Disabled Act as Section 710, but did not add a new Section 610. We will continue to refer to the Disabled Act as Section 610 to be consistent with other references in this Docket.

² "Essential Telephones" include only coin-operated telephones, telephones provided for emergency use, and other telephones frequently needed for use by persons using hearing aids specially designed for telephone use. 47 U.S.C. § 610(b).

³ Most external hearing aids have a built-in telephone pick-up, or "telecoil," which is activated by a switch on the hearing aid. When this switch is placed in the "telephone" position, the microphone is turned off and the hearing aid can be used at full volume without feedback and with minimal background noise. These hearing aids are activated by the magnetic field generated by telephone handsets. In-the-ear hearing aids generally rely on audio amplification rather than electromagnetic coupling (and a telecoil) to provide the wearer with telephone access. Unless otherwise indicated, references to hearing aid compatible telephones refer to equipment which is compatible with a telecoil type hearing aid. See House Report No. 97-888, 97th Cong. 2d Sess., at p.8 (House Report).

⁴ See Telecommunications Services for the Deaf and Hearing Impaired, *Notice of Inquiry*, CC Docket No. 78-50, 67 FCC 2d 1602 (1978), *terminated* FCC 83-177 (released May 3, 1983) and CC Docket No. 83-427, note 1, *supra*.

⁵ 2 FCC Rcd 2836 (1987); 52 Fed. Reg. 19198 (May 21, 1987).

⁶ The House Report accompanying the Disabled Act stated:

The reported bill does not require all telephones to be compatible with hearing aids. Rather, the bill preserves consumer choice while ensuring that the needs of the hearing impaired are fully served. The legislation focuses on those "essential telephones" to which the hearing impaired must have access if they are to function effectively in modern society. Companies are free to manufacture and to market non-compatible telephones, and businesses and consumers may purchase these instruments for use by persons who do not have hearing impairments.

House Report at p. 9. See also *infra* paras. 20-21.

⁷ Comments were received from telephone common carriers, state public utility commissions, equipment manufacturers, organizations representing persons with impaired hearing and other disabilities (Appendix B).

⁸ Maryland People's Counsel submitted comments on behalf of itself and the Hearing and Speech Agency of Metropolitan Baltimore, Inc., Maryland Department of Health and Mental Hygiene, Maryland Governor's Commission on Hearing Impairments, Maryland Governor's Office for Handicapped Individuals, National Center for Law and the Deaf, Organization for Use of the Telephone, Inc. and Telecommunications Exchange for the Deaf, Inc. (hereinafter jointly referred to as MPC).

⁹ Final Report, Disabled Consumers: An Exploratory Opinion Survey, Joint Telecommunications Project of the Consumer Federation of America, The American Association of Retired Persons and American Telephone and Telegraph, Inc. January 1987 (Report). The Report notes the study "was limited in scope and not intended to be generalizable to the population as a whole. The study examined the opinions of persons from three categories of disabling conditions: hearing impairment [43 interviews], visual impairment [25 interviews], and mobility impairment [33 interviews]". Report, Summary p. 1.

¹⁰ Report at p. 8.

¹¹ Report at p. 13.

¹² House Report, note 6: *supra*, at p. 9.

¹³ "In any Rule Making to implement the provisions of this Section, the Commission shall specifically consider the costs and benefits to all telephone users, including persons with and without hearing impairments. The Commission shall ensure that regulations adopted to implement this Section encourage the use of currently available technology and do not discourage or impair the development of improved technology." Section 610(e) of the Disabled Act.

¹⁴ See *infra* para. 41 et: seq.

¹⁵ The idea of greater dissemination of information to improve hearing impaired access to telephone services is also supported by Gallaudet Research Institute, among others.

¹⁶ Section 610(b) of the Disabled Act reads:

[T]he Commission shall require that essential telephones provide internal means for effective use with hearing aids that are specifically designed for telephone use. For purposes of this subsection, the term "essential telephones" means only coin-operated telephones, telephones provided for emergency use, and other telephones frequently needed for use by persons using such hearing aids.

¹⁷ United Telephone System Companies state they do not oppose universal hearing aid compatibility after a certain date. In fact, these companies say they have been purchasing and using only hearing aid compatible telephones since 1984. The New York State Department of Public Service supports a universal hearing aid compatibility requirement if the Commission finds the additional manufacturing cost in fact is *de minimus* as claimed by some parties. Alexander Graham Bell Association for the Deaf also supports this idea. It offers this support because it believes there always will be a segment of the hearing impaired population whose hearing deficiency will be such that a telecoil equipped hearing aid will be necessary in order for them to use a telephone.

¹⁸ The term TDD generally refers to a typewriter style device equipped with a message display (screen). This device generates from the keyboard a coded signal corresponding to the typed

character. This signal is passed over the telephone network via a voice circuit. Connection to the network generally is implemented through audio coupling via a telephone handset.

¹⁹ A number of telephone companies disclose that they provide an array of devices beyond TDDs designed to assist the disabled to communicate via the telephone. Some of the products available include hands-free speakerphones, amplifier-handsets, artificial larynxes, automatic dialers, different types of signaling devices and special equipment arrangements to meet the needs of mobility impaired individuals. The record shows that a number of states have established programs which provide disabled individuals needed equipment to use the telephone network. In many cases users are given free instructions on using the devices. Users of this equipment either receive the equipment for free or incur a very minimal charge. Generally, these programs are subsidized through a surcharge levied on ratepayers or local telephone companies.

²⁰ Manned relay service enables speech or hearing impaired TDD users to communicate with voice telephone users. The service is accessed via telephone by either a TDD or voice telephone user. The caller speaks to or types a call request to a translator who is equipped with a special video display system. Using this equipment, the translator translates the typed or voice message from one medium to the other, and completes the call to the called party. AT&T Comments, p. 11.

²¹ See, e. g., *Rural Telephone Coalition v. FCC*, No. 84-1110, slip op. at 15-19 (D.C. Cir. Feb. 5, 1988).

²² See para. 14, *supra*.

²³ For the same reasons we are unable to find that the other proposals, such as changing technical performance standards will effectively improve access by the hearing impaired. This issue is best left to consensus recommendations by affected parties. See further NOI, *infra*.

²⁴ PTC states that the cost per new amplifier handset is as much as \$85.00 and retrofitting existing units would range between \$20.00 and \$30.00 per telephone. That cost is likely to rise because these units are frequently vandalized.

²⁵ AT&T, Bell Atlantic Telephone Companies, MPC, GTE, Pacific Bell and Southwestern Bell Telephone Company.